



# World Scientific News

An International Scientific Journal

WSN 94(2) (2018) 298-304

EISSN 2392-2192

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SHORT COMMUNICATION

## Intentional Replantation of Endodontically Treated Tooth - A Case Report

**Saeed Kazi M. Yaqoob<sup>1,\*</sup>, Summan Dost<sup>1</sup>, Sana Siddiqui<sup>2</sup>**

<sup>1</sup>PG Trainee MCPS Periodontology, Federal Government Services Hospital, Pakistan

<sup>2</sup>PG Trainee MDS Operative Dentistry, Pakistan Institute of Medical Sciences,  
Shaheed Zulfiqar Ali Bhutto Medical University, Pakistan

\*E-mail address: [dr.saeedqazi@gmail.com](mailto:dr.saeedqazi@gmail.com)

### ABSTRACT

Conventional and surgical endodontic therapy are accepted as foreseen clinical procedures that save teeth with pulpal disease which would otherwise be extracted. When a tooth's pulp is irreversibly damaged or infected due to caries, cracks, trauma, or leaky restorations, endodontic therapy or extraction are the only workable options.

**Keywords:** Intentional replantation, conventional endodontics, surgical endodontics, nonsurgical retreatment

### 1. INTRODUCTION

A 35-year-old male patient presented in outdoor patient department had a complain of pain in lower right molar area when chewing. Upon examination, lower right second molar was found tender to percussion. History revealed that the patient underwent root canal treatment for this tooth and was informed about root perforation. Further clinical and

radiographic examination showed root perforation just apical to Cementoenamel junction in distal root and signs of chronic periapical periodontitis.

All possible treatment options were explained to the patient including *i)* tooth extraction with/without replacement, *ii)* retreatment, hemi section and coronal restoration, *iii)* peri radicular surgery, and *iv)* Intentional Replantation (IR). The risks and benefits of each option were thoroughly explained and an informed consent was taken.

The clinical procedure for IR was as follows: A Chlorhexidine rinse was carried out to control the oral microflora prior to procedure. After achieving complete local anesthesia, the tooth was intentionally and gently extracted using a suitable periosteal elevator and forceps. Extracted tooth was carefully root planed extra-orally. First removal of necrotic cementum, granulation tissues and all irritants from the root surfaces was carried out using periodontal curettes. Root conditioning was done using EDTA and doxycycline rinses. Extra oral root canal treatment was performed and the perforation was repaired by using Mineral trioxide aggregate (MTA). The 2-3 mm root-end was resected using diamond bur. Granulation tissue in the extraction socket was removed by gentle curettage and the socket was rinsed with sterile saline. The tooth was then gently replanted into the socket followed by gently pressing the buccal and lingual plates. The patient was asked to bite gently on a wooden stick afterwards which helped in stabilizing the tooth. The accurate repositioning was confirmed by radiography. The tooth did not require stabilization with splints as it was slightly cut-off from occlusion. Tab. Augmentin 625 mg in combination with metronidazole 400 mg was prescribed in BD dose for 5 days. Patient was recalled after 7 days for suture removal and every month thereafter for 3 months

## **2. RESULT / EXPERIMENTAL**

- 1) When routine RCT is impossible or impractical, as with some patients with limited mouth opening or cannot open for the necessary time.
- 2) When a previous RCT has been unsuccessful but orthograde retreatment or apical surgery is impractical.
- 3) Obstruction of canal due to instrument separation or calcification.
- 4) When surgical access would be inadequate, such as a shallow buccal vestibule or short roots.
- 5) When an iatrogenic perforation or a perforating internal or external resorption is present, but surgery is impractical.
- 6) When a foreign body is present in periapical (PA) tissues or PDL, but surgery is impractical.
- 7) If PA radiographs show a large region of rarefaction or a large cyst.
- 8) When the root canal is furcated as it approaches the apex.
- 9) For RCT of immature teeth.
- 10) For primary teeth, as an alternative to extraction and placement of a space maintainer.

- 11) Management of vertical root fractures by reconstructing with dentin bonding agents- management of complicated crown-root fractures.
- 12) For RCT of teeth with certain anatomical malformations such as radicular groove or double teeth.
- 13) Progressive destruction of periodontal tissues and management of teeth with advanced endo-perio lesions.
- 14) Management of maxillary sinusitis. (6)



*i) Preoperative photograph*



*ii) Atraumatic extraction of the tooth*



*iii) Access cavity preparation and root canal treatment*



*iv) Root planning, conditioning & Apicectomy*



*v) Postoperative radiograph ()*



*vi) Debridement and curettage of the socket*



*vii) Removal of all the granulation tissue*



*viii) Radiograph after replantation*



*ix) Follow-up visit: (1 month)*



*x) Follow-up visit: (1 month)*



*xi) Follow-up (04 months)  
almost complete periapical healing*

### 3. CONCLUSIONS

Conventional apicoectomy or non-surgical retreatment is a first choice for cases with persistent and recurrent periapical symptoms after root canal therapy. However, in some cases, due to anatomic difficulties or contraindications for surgery or retreatment, an intentional replantation procedure can be performed as an alternative to complete extraction. Case selection is very important for the success; the most significant selection criteria include non-fractured teeth with conical roots, lack of periodontal pathology, and intact, well-sealing coronal restorations. Atraumatic extraction and extraoral times less than 10 minutes will give intentional replantation procedure a better prognosis.

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